

CONTINUOUS BASELINE STUDY

Project 1108-B

Progress Report 78

to

FOURDRINIER KRAFT BOARD INSTITUTE, INC.

January 1, 1954

FOREST PROD.
FILE C
DO NOT REMOVE

THE INSTITUTE OF PAPER CHEMISTEY

Appleton, Wisconsin

CONTINUOUS BASELINE STUDY

Project 1108-B

Progress Report 78

to

FOURDRINIER KRAFT BOARD INSTITUTE, INC.

January 1, 1954

THE INSTITUTE OF PAPER CHEMISTRY

Appleton, Wisconsin

In conjunction with the F.K.I. Continuous Baseline Study, one hundred and four different sample lots of 42-lb. Fourdrinier kraft linerboard were submitted by thirteen different F.K.I. mills to The Institute of Paper Chemistry for testing during the period December 1 through December 31. In addition to the 42-lb. kraft linerboard, two samples of special drum stock, one sample of 44-lb. linerboard, and one sample of 39-lb. linerboard were also submitted for evaluation by one of the participating mills. The results on the special stock are tabulated separately in this report. A tabulation of the number of samples classified according to mill may be seen in Table I.

TABLE I
DISTRIBUTION OF 42-LB. LINERBOARD SAMPLES

Mill Code	Samples Submitted
A	7
B	24
C	8
D	6
E	2
F	15
G	8
H	2
I	4
J	6
K	0
L	8
M	7
N	7
O	<u>0</u>
	104

These sample lots were tested for basis weight, caliper, bursting strength, G. E. puncture, and Elmendorf tear. The average strength results for each mill may be seen in Table II and are graphically presented in Figures 1 to 6. In addition to a comparison of the mill averages for the various tests, Table II also shows the current F.K.I. averages, the cumulative F.K.I. averages, and the F.K.I. indexes. The cumulative F.K.I. average includes all the results up to but not including the current period; the current period in the case of this report is December 1 through December 31. The F.K.I. indexes are obtained as follows:

$$\frac{\text{current F.K.I. average}}{\text{cumulative F.K.I. average}} \times 100 = \text{F.K.I. index (\%)}$$

The F.K.I. index provides a ready means of comparing the current quality with previous results. For example, the current F.K.I. average basis weight is 43.4 lb., and the cumulative F.K.I. average basis weight is 43.1 lb. Hence, the index for basis weight determined in per cent as indicated above is 100.7. This signifies that the current average basis weight is slightly higher than the cumulative average, which in this case covered the period from July 25, 1947, through November 30, 1953.

A comparison of the results in Table II and Figure 1 shows that the average basis weight results for all mills conform to the 42-lb. specification set forth in Rule 41. Mill E has the highest average basis weight, it being 44.6 lb. or approximately 6.2% higher than the 42-lb. specification. On the other hand, Mill F has the

lowest average basis weight, it being 42.5 lb., approximately 1.2% higher than the 42-lb. specification.

The amount by which the mills vary from the 42-lb. specification is as follows:

Mill Code	Per Cent
A	+3.6
B	+4.3
C	+3.1
D	+2.6
E	+6.2
F	+1.2
G	+4.5
H	+2.1
I	+1.4
J	+2.6
K	---
L	+3.1
M	+5.2
N	+2.1
O	--

A comparison of the average basis weight data for the previous period with the current F.K.I. average indicates that the basis weight results have increased slightly.

A comparison of the average caliper values for the various mills (see Figure 2) shows that the mill averages vary from a low of 12.3 for Mill N to a high of 14.2 for Mills C and E, the average being 13.1 which is somewhat lower than the cumulative average of 13.8.

The average bursting strength values obtained for each mill are graphically presented in Figure 3. It may be observed in Table II that the average bursting strength values for the various mills range

from a low of 104 for Mill L to a high of 124 for Mill G. The current F.K.I. average bursting strength is 109, slightly higher than the cumulative average of 106.

The data of Table II and Figure 4 show that the average G.E. puncture result for all mills is 33 units. Mill F has the highest G. E. puncture average, 36 units; Mill B has the lowest average, 30 units. The current F.K.I. G. E. puncture average of 33 units is lower than the cumulative F.K.I. average of 36 units.

A graphic comparison of the Elmendorf tear results for the various mills is given in Figures 5 and 6. The data of Table II show that Mill M has the highest average machine direction tear value while Mill B has the lowest. Mill F has the highest average cross-machine direction tear value, whereas Mill B has the lowest value. It may be noted that the current F.K.I. average machine and cross-machine direction tear results are lower than the cumulative averages.

A comparison of the F.K.I. indexes indicate that, for the current period, the current F.K.I. averages for caliper, G. E. puncture and Elmendorf tear are lower than the respective cumulative F.K.I. averages, whereas the current F.K.I. averages for basis weight and bursting strength are higher.

In order to compare the variation within a given mill, the test results for each particular mill have been tabulated in Tables III to XVII for Mills A to O, respectively. In addition to the current and cumulative averages, the mill factor and mill index are given for

each mill. The cumulative mill average is the average test result obtained on the samples submitted by the particular mill up to, but not including, the current average. The mill factor and the mill index are obtained as follows:

$$\frac{\text{current mill average}}{\text{cumulative mill average}} \times 100 = \text{mill factor (\%)}$$

$$\frac{\text{current mill average}}{\text{cumulative F.K.I. average}} \times 100 = \text{mill index (\%)}$$

The mill factor and the mill index serve as a ready means for comparing the current mill results either with the previous results for that particular mill or with the cumulative F.K.I. results. As the test data accumulate, the factors and indexes acquire added significance. The reports also contain a comparison of the test data obtained at the mills with test data obtained at The Institute of Paper Chemistry.

The results obtained on the special drum stock may be seen in Table XVIII.

It may be noted in Tables III through XVII that the data have been separated on the basis of the sheet finish. The summarized results for the mills which submitted sample lots during the current period are as follows:

Mill Code	No. of Sample Lots		
	W.F.	D.F.	Misc.
A	7 ^a		
B	24 ^a		
C	8		
D	6		

(Continued on the next page.)

Mill Code	No. of Sample Lots		
	W.F.	D.F.	Misc.
E	2, 2 ^b		
F	15		
G	8		
H	2 ^a		
I	4 ^a		
J			6 ^d
L			8 ^c
M	7		
N	6 ^a		1 ^c

a One side only.

b Drum linerboard.

c Sheet finish not reported.

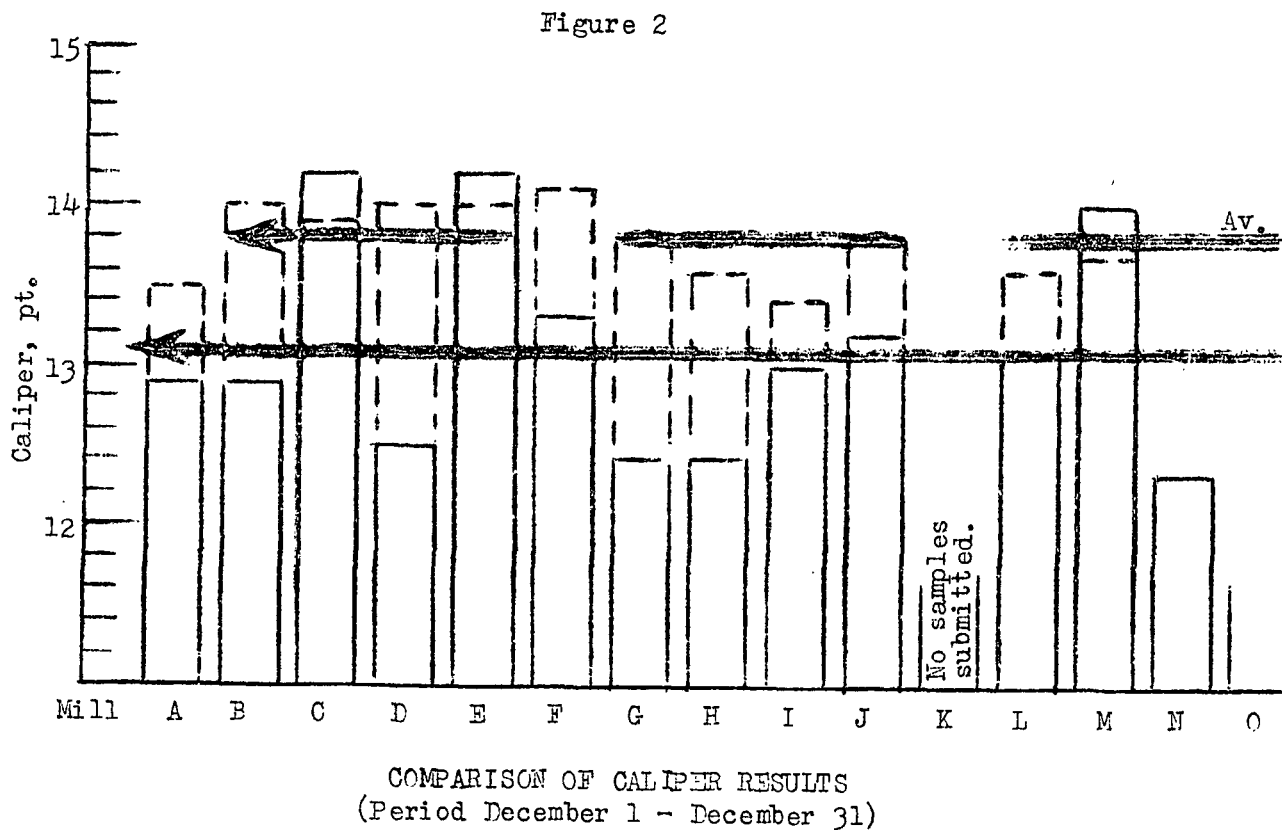
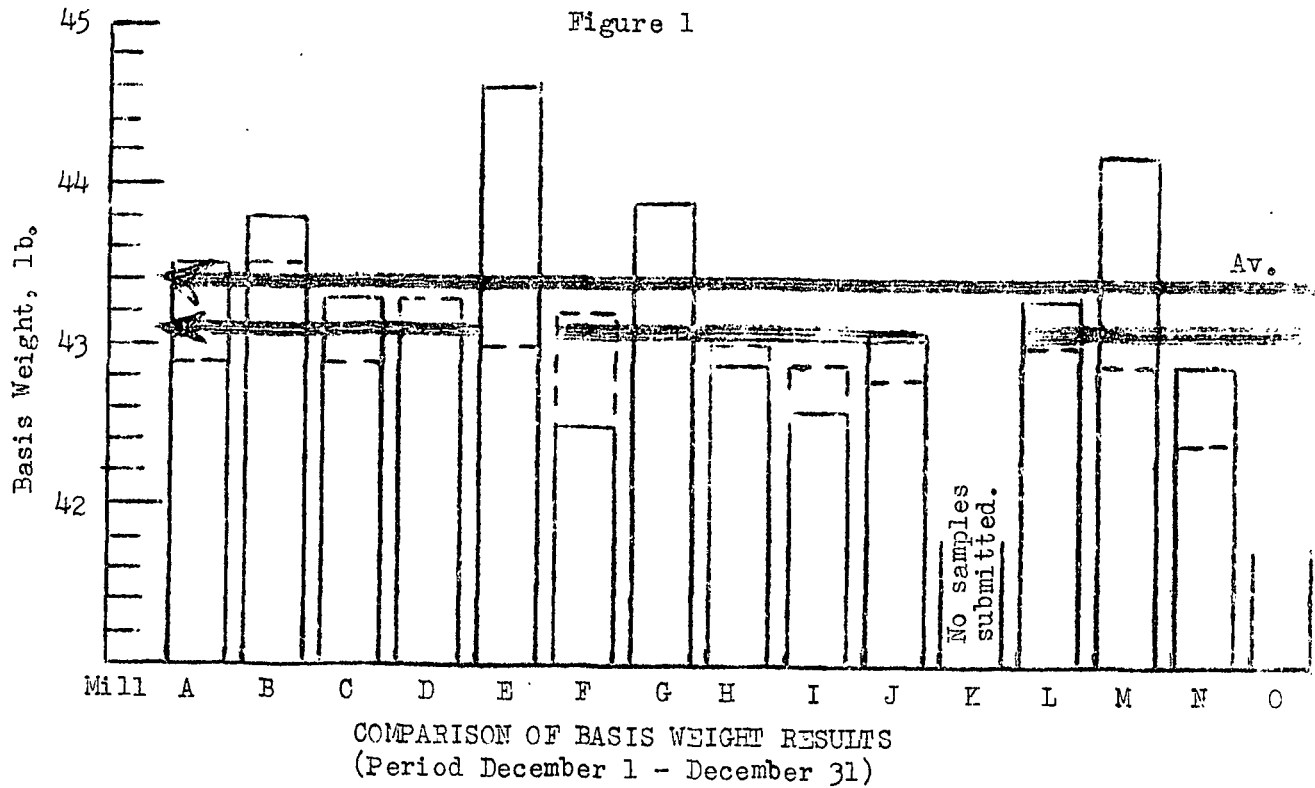
d Semi-water finish.

The results indicate that a majority of the mills are using
a water finish on their 42-lb. linerboard.

TABLE II

SUMMARY OF COMPOSITE MILL AVERAGES--DECEMBER 1 THROUGH DECEMBER 31, 1953

Code No.	Basis Weight, lb.	Caliper, points	Bursting Strength, p.s.i. gage	G. E. Puncture, units	Elmendorf Tear, g./sheet	
					In Direction	Across Direction
A	43.5	12.9	111	32	329	374
B	43.8	12.9	108	30	309	360
C	43.3	14.2	110	34	337	381
D	43.1	12.5	107	34	359	383
E	44.6	14.2	105	34	370	378
F	42.5	13.3	106	36	377	415
G	43.9	12.4	124	33	355	391
H	42.9	12.4	106	32	347	397
I	42.6	13.0	109	31	339	394
J	43.1	13.2	113	31	360	381
K	No samples submitted.					
L	43.3	13.1	104	35	356	386
M	44.2	14.0	107	35	404	402
N	42.9	12.3	106	35	343	392
O	No samples submitted.					
Current FKI Average:	43.4	13.1	109	33	353	387
Cumulative FKI Average:	43.1	13.8	106	36	370	403
FKI Index, %:	100.7	94.9	102.8	91.7	95.4	96.0



—— Current mill average
- - - - Cumulative mill average

Figure 3

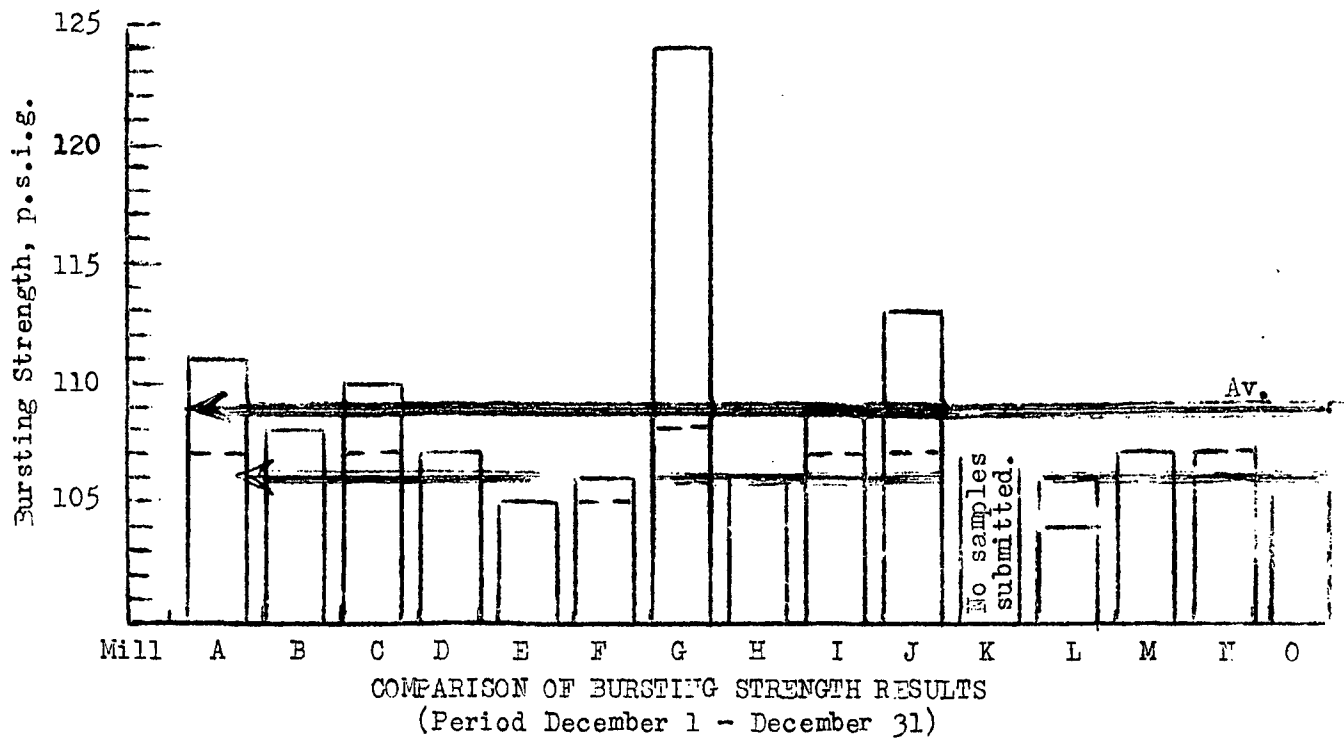
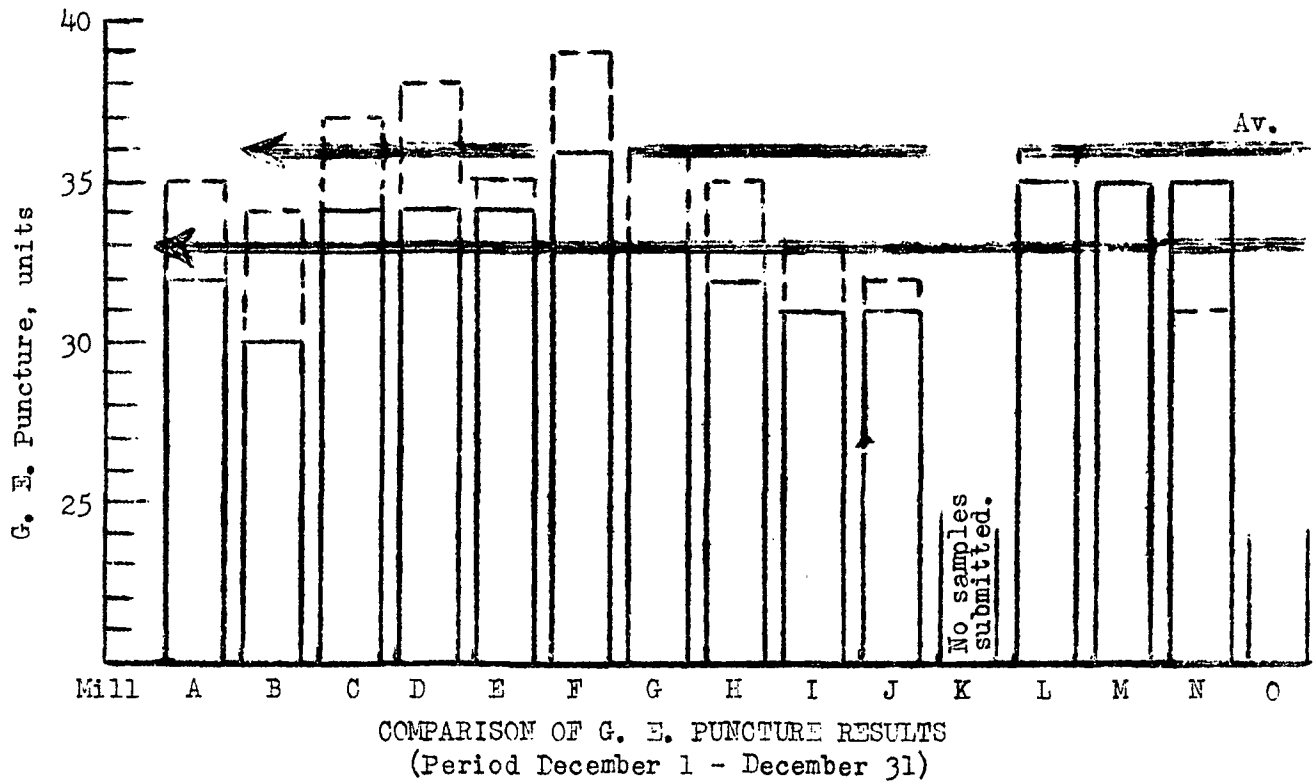


Figure 4



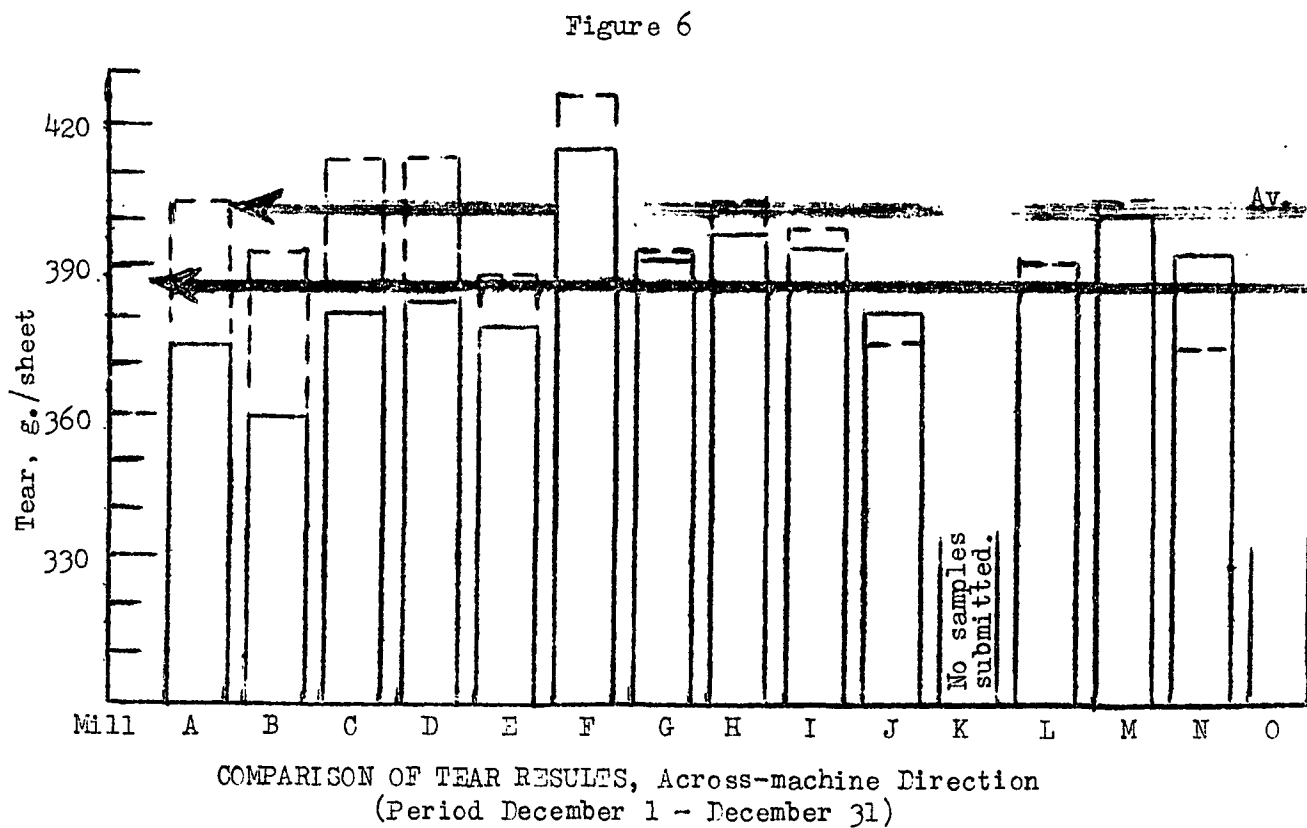
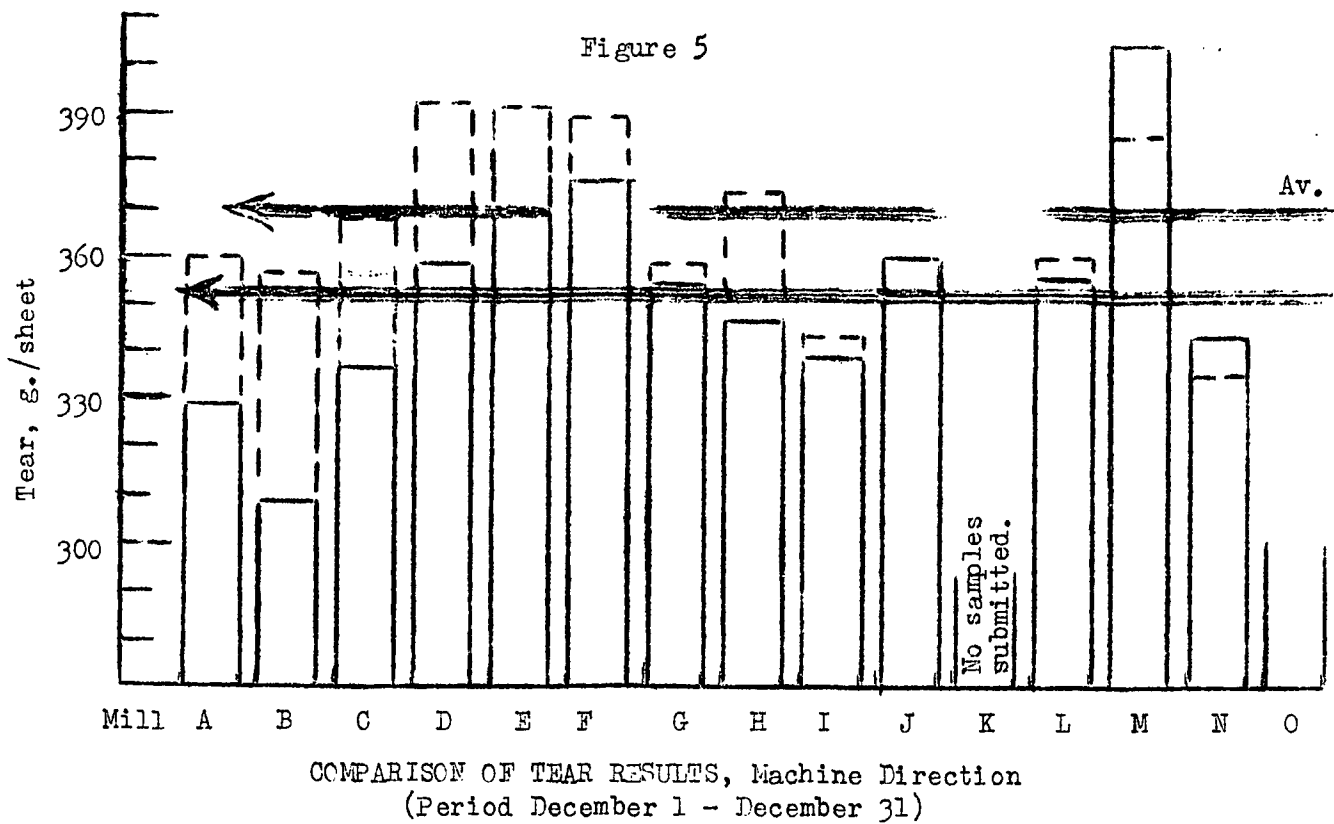


TABLE III

SUMMARY OF INDIVIDUAL TEST LOTS--DECEMBER 1 THROUGH DECEMBER 31, 1953

File No.	Mill Code	Fin- ish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			G. E. Puncture, units			Elmendorf Tear, g./sheet					
						Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	In		Across			
																		Max.	Min.	Av.	Max.	Min.	Av.
Mill A--42-lb. Linerboard																							
156306	A-502	WF1S	12/ 4/53	11/22/53	2	43.6	42.2	43.1	13.0	12.4	12.5	130	88	111	36	30	33	352	312	327a	376	328	357a
156307	A-503	WF1S	12/ 4/53	11/24/53	1	43.8	41.8	42.7	13.2	12.3	12.9	132	77	108	33	28	31	368	288	323a	384	328	363a
156355	A-504	WF1S	12/ 9/53	11/29/53	1	44.8	42.8	43.3	13.0	12.4	12.8	122	77	101	34	28	30	328	248	288	384	320	353a
156356	A-505	WF1S	12/ 9/53	12/ 1/53	2	44.0	42.6	43.4	13.3	12.3	12.9	135	89	110	35	31	33	408	312	34Ca	408	344	375a
156490	A-506	WF1S	12/17/53	12/ 6/53	2	44.0	42.0	43.1	13.0	12.1	12.8	137	87	108	34	28	32	352	240	311	400	320	363a
156546	A-507	WF1S	12/24/53	12/14/53	1	45.4	44.0	44.5	13.7	12.8	13.2	142	101	119	38	31	34	408	320	354a	464	368	409a
156547	A-508	WF1S	12/24/53	12/15/53	1	45.6	43.6	44.6	13.7	12.8	13.3	141	96	118	38	33	35	384	328	359a	432	368	399a
Current Mill Average:						43.5			12.9			111			32			329			374		
Cumulative Mill Average:						42.9			13.5			107			35			360			404		
Mill Factor, %:						101.4			95.6			103.7			91.4			91.4			92.		
Mill Index, %:						100.9			93.5			104.7			88.9			88.9			92.		

^a This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

TABLE IV

SUMMARY OF INDIVIDUAL TEST LOTS--DECEMBER 1 THROUGH DECEMBER 31, 1953 (continued)

File No.	Mill Code	Fin- ish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			G. E. Puncture, units			Elmendorf Tear, g./sheet							
						Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	In		Across		Av.	Max.	Min.	Av.
Mill B--42-lb. Linerboard																									
156292	B-903	WF1S	12/ 2/53	11/23/53	1	44.0	42.6	43.2	13.2	12.2	12.7	133	80	111	30	26	28	328	240	282	376	296	342a		
156293	B-904	WF1S	12/ 2/53	11/23/53	1	44.0	42.6	43.3	13.2	12.3	12.7	127	96	108	30	26	27	336	248	287a	376	312	345a		
156294	B-905	WF1S	12/ 2/53	11/23/53	1	44.0	42.4	43.4	13.5	12.0	12.7	122	101	110	30	25	27	304	223	269a	368	304	335a		
156298	B-906	WF1S	12/ 3/53	11/23/53	1	44.0	42.2	43.0	13.1	12.2	12.7	127	92	112	30	26	28	320	264	291	384	304	344a		
156317	B-907	WF1S	12/ 5/53	11/24/53	1	44.2	42.4	43.4	13.8	12.8	13.2	124	87	106	34	27	29	328	256	289	384	296	338a		
156318	B-908	WF1S	12/ 5/53	11/24/53	1	44.6	42.4	43.7	13.6	12.8	13.2	122	75	99	31	26	29	352	264	293a	384	304	335a		
156319	B-909	WF1S	12/ 5/53	11/24/53	1	44.4	42.6	43.6	13.9	12.7	13.2	120	80	104	32	28	30	312	240	286a	376	320	347a		
156320	B-910	WF1S	12/ 5/53	11/24/53	1	44.0	42.4	43.4	13.5	12.4	13.0	118	90	103	31	27	29	312	264	280	384	296	329a		
156321	B-911	WF1S	12/ 5/53	11/24/53	1	44.8	42.2	43.6	13.8	12.7	13.2	118	86	104	30	26	28	312	248	279	360	296	329a		
156322	B-912	WF1S	12/ 5/53	11/24/53	1	44.4	43.2	43.7	13.6	13.0	13.3	118	76	106	32	27	29	336	256	292a	376	304	335a		
156323	B-913	WF1S	12/ 5/53	11/24/53	1	44.2	42.6	43.4	13.7	12.8	13.2	121	82	102	30	26	28	328	256	284a	360	304	333a		
156324	B-914	WF1S	12/ 5/53	11/24/53	1	44.2	42.6	43.8	14.1	13.1	13.3	127	83	107	33	27	29	312	264	280a	368	238	335a		
156498	B-915	WF1S	12/18/53	12/ 8/53	1	45.6	43.0	44.4	13.7	12.5	13.0	135	74	112	36	30	33	416	288	357a	440	368	396a		
156499	B-916	WF1S	12/18/53	12/ 8/53	1	45.6	42.2	44.5	14.1	12.7	13.1	137	78	112	36	30	33	392	312	347a	464	336	421a		
156500	B-917	WF1S	12/18/53	12/ 8/53	1	45.6	43.2	44.3	13.3	12.4	12.9	134	87	108	38	31	33	400	320	359a	416	328	375a		
156493	B-918	WF1S	12/17/53	12/ 8/53	1	45.6	42.0	44.1	13.3	12.1	12.9	131	86	111	36	30	33	384	296	339a	440	368	399a		
156534	B-919	WF1S	12/22/53	12/ 8/53	1	45.8	43.4	44.7	13.4	12.3	13.0	130	92	112	35	31	33	384	320	347a	440	368	395a		
156535	B-920	WF1S	12/22/53	12/ 8/53	1	46.0	43.0	44.0	13.2	12.5	12.8	127	85	108	35	30	33	416	288	335a	448	360	390a		
156542	B-921	WF1S	12/23/53	12/ 8/53	1	45.2	43.2	44.1	13.5	12.7	13.0	126	84	110	35	30	33	384	264	340a	432	352	385a		
156536	B-922	WF1S	12/22/53	12/ 8/53	1	45.2	43.4	44.4	13.5	12.3	12.9	129	76	109	35	30	33	440	272	327a	480	328	379a		
156537	B-923	WF1S	12/22/53	12/15/53	1	44.0	42.4	43.4	12.9	11.4	12.2	128	78	109	31	27	29	368	272	313	384	304	356a		
156538	B-924	WF1S	12/22/53	12/15/53	1	44.4	42.4	43.4	13.0	11.5	12.2	125	92	110	31	26	29	344	256	307a	384	328	356a		
156539	B-925	WF1S	12/22/53	12/15/53	1	44.2	42.4	43.6	12.6	11.5	12.0	120	89	109	30	27	29	400	272	322a	432	328	365a		
156543	B-926	WF1S	12/23/53	12/15/53	1	44.4	42.8	43.7	13.1	11.8	12.3	129	87	113	32	26	29	352	264	320a	400	336	369a		
Current Mill Average:									43.8			12.9			108			30			309			360	
Cumulative Mill Average:									43.5			14.0			106			34			357			393	
Mill Factor, %:									100.7			92.1			101.9			88.2			86.6			91.6	
Mill Index, %:									101.6			93.5			101.9			83.3			83.5			89.3	

This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

TABLE V

SUMMARY OF INDIVIDUAL TEST LOTS--DECEMBER 1 THROUGH DECEMBER 31, 1953 (continued)

File No.	Mill Code	Fin- ish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			G. E. Puncture, units			Elmendorf Tear, g./sheet					
						Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	In			Across		
																		Max.	Min.	Av.	Max.	Min.	Av.
Mill C--42-lb. Linerboard																							
156466	C-523	W.F.	12/15/53	12/ 2/53	1	43.8	42.8	43.5	14.8	13.8	14.2	120	90	108	36	29	33	368	304	337a	416	344	373a
156467	C-524	W.F.	12/15/53	12/ 2/53	1	44.0	42.4	43.4	15.1	13.5	14.2	133	89	111	35	30	33	384	288	335a	400	352	376a
156468	C-525	W.F.	12/15/53	12/ 3/53	1	44.4	42.4	43.4	13.5	13.1	13.8	126	97	113	35	31	33	352	288	321a	408	336	365a
156469	C-526	W.F.	12/15/53	12/ 3/53	1	44.2	41.8	43.3	14.3	13.4	13.9	124	95	110	34	29	32	352	288	329a	400	352	366a
156501	C-527	W.F.	12/18/53	12/ 8/53	1	43.8	41.8	42.7	14.8	13.1	14.1	135	83	107	38	32	34	384	280	343	432	368	395a
156502	C-528	W.F.	12/18/53	12/ 8/53	1	44.0	41.6	42.4	14.5	13.3	14.0	124	87	107	38	30	33	368	304	341	448	336	395a
156503	C-529	W.F.	12/18/53	12/ 9/53	1	44.8	42.4	43.8	15.1	14.0	14.6	131	88	111	39	33	36	368	304	341a	432	368	392a
156504	C-530	W.F.	12/18/53	12/ 9/53	1	44.4	42.0	43.8	15.2	13.5	14.6	136	89	112	38	33	36	384	312	353	424	336	386a
Current Mill Average:						43.3			14.2			110			34			337			381		
Cumulative Mill Average:						42.9			13.9			107			37			368			413		
Mill Factor, %:						100.9			102.2			102.8			91.9			91.6			92.3		
Mill Index, %:						100.5			102.9			103.8			94.4			91.1			94.5		

^a This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

TABLE VI

SUMMARY OF INDIVIDUAL TEST LOTS--DECEMBER 1 THROUGH DECEMBER 31, 1953 (continued)

File No.	Mill Code	Fin- ish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			G. E. Puncture, units			Elmendorf Tear, g./sheet							
						Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	In Av.	Max.	Min.	Across Av.	
<u>Mill D--42-lb. Linerboard</u>																									
156353	D-718	W.F.	12/ 9/53	12/ 5/53	4	43.8	42.0	42.8	13.3	11.9	12.7	119	76	101	38	30	33	376	312	347a	400	336	373a		
156354	D-719	W.F.	12/ 9/53	12/ 6/53	4	43.2	42.2	42.5	13.5	12.0	12.5	128	70	105	38	31	34	432	312	357a	440	320	375a		
156487	D-720	W.F.	12/16/53	12/11/53	4	44.4	41.8	43.2	12.9	12.0	12.4	117	83	102	38	31	34	424	272	351a	432	336	392a		
156488	D-721	W.F.	12/16/53	12/13/53	4	43.8	41.6	43.1	13.0	12.0	12.5	123	76	108	37	30	34	400	320	363a	432	352	391a		
156489	D-722	S.F.	12/17/53	12/14/53	4	44.2	43.0	43.8	12.9	12.0	12.3	143	103	122	38	32	36	416	336	371a	416	352	391a		
156495	D-723	W.F.	12/18/53	12/15/53	4	44.2	42.4	43.2	13.2	12.1	12.8	123	78	103	36	30	32	448	320	363a	440	320	379a		
Current Mill Average:									43.1			12.5			107			34			359			383	
Cumulative Mill Average:									43.3			14.0			107			38			393			413	
Mill Factor, %:									99.5			89.3			100.0			89.5			91.3			92.7	
Mill Index, %:									100.0			90.6			100.9			94.4			97.0			95.0	

TABLE VII

Mill E--42-lb. Linerboard

156275	E-47	W.F.	12/ 1/53	11/25/53	2	45.0	42.0	43.6	14.6	13.5	14.1	108	76	93	37	29	33	416	312	366a	432	328	361a
156361	E-49	W.F.	12/10/53	12/ 7/53	2	47.8	44.4	45.5	14.9	13.9	14.4	137	103	116	37	33	35	424	312	373a	464	320	394a
Current Mill Average:								44.6			14.2			105			34			370			378
Cumulative Mill Average:								43.0			14.0			105			35			392			388
Mill Factor, %:								103.7			101.4			100.0			97.1			94.4			97.4
Mill Index, %:								103.5			102.9			99.1			94.4			100.0			93.8

^a This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

TABLE VIII

SUMMARY OF INDIVIDUAL TEST LOTS--DECEMBER 1 THROUGH DECEMBER 31, 1953 (continued)

File No.	Mill Code	Fin- ish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength P.s.i. gage			G.E. Puncture, units			Elmendorf Tear, g./sheet						
						Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	In			Across			
Mill F--42-lb. Linerboard																								
156325	F-72	W.F.	12/ 5/53	10/30/53	--	43.2	41.6	42.3	13.7	12.3	13.0	127	71	106	40	33	36	432	344	376a	456	376	423a	
156326	F-73	W.F.	12/ 5/53	11/ 3/53	--	41.4	39.6	40.7	13.9	12.3	13.1	119	88	106	37	31	34	376	320	350	472	320	412a	
156327	F-74	W.F.	12/ 5/53	11/ 3/53	--	43.6	42.2	42.6	13.6	12.6	13.1	117	82	103	39	32	34	432	336	370a	408	352	382a	
156328	F-75	W.F.	12/ 5/53	11/ 6/53	--	43.8	42.2	42.7	14.3	12.9	13.6	120	79	102	44	36	38	408	336	377a	432	376	406a	
156329	F-76	W.F.	12/ 5/53	11/ 6/53	--	41.6	40.0	40.7	13.5	12.8	13.1	117	88	102	37	31	34	400	320	358a	432	352	388a	
156330	F-77	W.F.	12/ 5/53	11/ 9/53	--	43.4	40.8	42.4	13.8	12.7	13.2	125	81	106	40	29	35	424	320	361a	464	352	403a	
156331	F-78	W.F.	12/ 5/53	11/12/53	--	43.8	40.6	42.6	13.9	13.0	13.4	124	90	108	39	31	35	400	320	349	456	344	394a	
156332	F-79	W.F.	12/ 5/53	11/16/53	--	44.2	41.6	42.9	14.2	13.0	13.8	118	83	102	42	35	39	432	360	385a	448	368	415a	
156450	F-80	W.F.	12/14/53	11/17/53	--	43.4	40.6	42.1	13.9	12.1	13.2	125	89	105	41	35	37	440	368	395a	438	400	433a	
156451	F-81	W.F.	12/14/53	11/20/53	--	44.0	42.0	43.0	14.0	13.0	13.5	122	77	104	40	34	37	448	312	389a	464	376	427a	
156452	F-82	W.F.	12/14/53	11/21/53	--	45.0	42.0	43.3	14.0	13.0	13.5	125	93	107	42	35	38	464	352	392a	512	392	433a	
156453	F-83	W.B.	12/14/53	11/24/53	1	44.0	41.6	43.2	14.0	12.9	13.5	131	82	103	42	36	39	464	336	385a	464	368	419a	
156454	F-84	W.F.	12/14/53	11/25/53	--	43.2	41.6	42.8	13.9	12.4	13.1	136	90	110	41	35	37	464	320	394a	476	376	430a	
156455	F-85	W.F.	12/14/53	11/25/53	--	43.6	41.4	42.8	13.7	11.7	12.8	136	89	110	39	32	36	488	336	395a	448	392	423a	
156456	F-86	W.F.	12/14/53	12/ 3/53	--	44.6	42.4	43.5	14.0	12.2	13.4	123	87	108	39	31	36	432	336	385a	480	400	436a	
Current Mill Average:						42.5			13.3			106			36			377			415			
Cumulative Mill Average:						43.2			14.1			105			39			389			426			
Mill Factor, %:						98.4			94.3			101.0			92.3			96.9			97.4			
Mill Index, %:						98.6			96.4			100.0			100.0			101.9			103.0			

^a This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

TABLE IX

SUMMARY OF INDIVIDUAL TEST LOTS--DECEMBER 1 THROUGH DECEMBER 31, 1953 (continued)

File No.	Mill Code	Fin- ish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			G. E. Puncture, units			Elmendorf Tear, g./sheet								
						Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	In		Across		Av.	Max.	Min.	Av.	
																		Max.	Min.							
Mill G--42-lb. Linerboard																										
156301	G-542	W.F.	12/ 3/53	11/18/53	--	44.2	43.8	44.0	12.4	11.7	12.1	143	102	125	35	28	32	416	288	351a	432	336	379a			
156302	G-543	W.F.	12/ 3/53	11/18/53	--	46.0	43.6	44.4	12.6	11.8	12.2	150	108	127	35	30	33	416	336	367a	416	352	391a			
156278	G-544	W.F.	12/ 1/53	11/26/53	--	45.2	43.2	43.9	13.2	11.9	12.6	145	108	127	35	30	32	400	320	356a	416	320	379a			
156279	G-545	W.F.	12/ 1/53	11/26/53	--	45.8	43.4	44.6	12.7	11.7	12.0	149	104	128	37	31	34	408	304	369a	440	360	395a			
156464	G-546	W.F.	12/15/53	12/ 3/53	--	44.0	41.8	43.2	12.4	11.4	12.0	154	117	137	35	29	31	392	288	329a	424	344	381a			
156465	G-547	W.F.	12/15/53	12/ 3/53	--	43.8	42.2	43.3	13.0	12.0	12.4	148	94	124	35	29	32	384	312	346a	432	352	396a			
156496	G-548	W.F.	12/18/53	12/ 9/53	--	45.6	43.4	44.3	14.2	12.0	13.0	134	89	114	39	30	35	408	320	355a	456	352	399a			
156497	G-549	W.F.	12/18/53	12/ 9/53	--	44.6	42.6	43.5	13.9	12.2	13.0	132	78	113	38	31	34	432	304	365a	480	384	407a			
Current Mill Average:									43.9			12.4			124			33			355			391		
Cumulative Mill Average:									43.1			13.8			108			36			359			393		
Mill Factor, %:									101.9			89.9			114.8			91.7			98.9			99.5		
Mill Index, %:									101.9			89.9			117.0			91.7			95.9			97.0		

TABLE X

<u>Mill H--42-lb. Linerboard</u>																							
156441	H-429	WF1S	12/12/53	11/30/53 ^b	2	44.4	41.8	43.1	12.7	11.9	12.3	134	80	105	34	28	32	384	296	352	440	352	394a
156442	H-430	WF1S	12/12/53	12/ 1/53 ^b	2	43.6	41.8	42.6	12.9	11.9	12.4	129	90	107	36	30	32	408	288	342	480	352	401a
Current Mill Average:								42.9			12.4			106			32			347			397
Cumulative Mill Average:								43.0			13.6			106			35			374			404
Mill Factor, %:								99.8			91.2			100.0			91.4			92.8			93.3
Mill Index, %:								99.5			89.9			100.0			88.9			93.8			93.5

^a This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

^b This date appeared on the sample received by the Institute. The mill data sheet gives the date of manufacture as December 4, 1953.

TABLE XI

SUMMARY OF INDIVIDUAL TEST LOTS--DECEMBER 1 THROUGH DECEMBER 31, 1953 (continued)

File No.	Mill Code	Fin- ish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			G. E. Puncture, units			Elmendorf Tear, g./sheet					
						Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	In Max.	Min.	Av.
Mill I--42-lb. Linerboard																							
156359	I-349	WF1S	12/ 9/53	12/ 1/53	1	42.6	41.8	42.2	12.9	12.2	12.6	123	89	111	32	28	30	400	304	332a	408	352	375a
156360	I-350	WF1S	12/ 9/53	12/ 2/53	1	42.8	42.0	42.3	13.0	12.2	12.6	120	100	110	32	28	30	376	280	336a	416	368	393a
156482	I-351	WF1S	12/16/53	12/ 3/53	1	44.0	42.4	43.3	14.3	13.3	13.9	135	85	107	35	30	33	400	288	343a	496	368	419a
156483	I-352	WF1S	12/16/53	12/ 4/53	1	43.6	41.8	42.7	13.0	12.2	12.8	124	89	108	34	30	32	408	304	343a	448	320	389a
Current Mill Average:						42.6			13.0			109			31			339			394		
Cumulative Mill Average:						42.9			13.4			107			33			343			398		
Mill Factor, %:						99.3			97.0			101.9			93.9			98.8			99.0		
Mill Index, %:						98.8			94.2			102.8			86.1			91.6			97.8		

TABLE XII

Mill J--42-lb. Linerboard

156299	J-459	B.F.	12/ 3/53	11/ 8/53	--	43.6	41.4	42.5	13.8	12.7	13.2	145	85	108	33	27	31	416	288	348a	472	352	404a
156300	J-460	B.F.	12/ 3/53	11/ 8/53	--	44.2	42.0	42.8	13.5	12.7	13.1	127	95	108	33	28	31	432	336	384a	408	336	378a
156394	J-461	B.F.	12/11/53	11/24/53	--	44.4	40.8	42.9	13.6	12.2	12.9	135	100	115	34	27	30	520	312	377a	416	328	382a
156519	J-462	B.F.	12/11/53	11/24/53	--	45.2	41.6	43.3	13.6	12.3	13.0	135	107	120	34	28	31	440	304	365a	480	336	399a
156519	J-463	B.F.	12/19/53	12/ 1/53	--	44.6	42.2	43.8	14.2	13.2	13.6	134	88	114	32	28	31	376	264	337a	400	320	362a
156520	JJ-464	B.F.	12/19/53	12/ 1/53	--	44.4	42.0	43.2	14.0	13.0	13.5	131	89	111	32	27	30	384	304	348a	400	336	363a
Current Mill Average:						43.1			13.2			113			31			360			381		
Cumulative Mill Average:						42.8			13.8			107			32			353			375		
Mill Factor, %:						100.7			95.7			105.6			96.9			102.0			101.6		
Mill Index, %:						100.0			95.7			106.6			86.1			97.3			94.5		

^a This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

TABLE XIII

SUMMARY OF INDIVIDUAL TEST LOTS--DECEMBER 1 THROUGH DECEMBER 31, 1953 (continued)

File No.	Mill Code	Fin- ish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			G. E. Puncture, units			Elmendorf Tear, g./sheet					
						Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	In		Across

Mill K--42-lb. Linerboard

No samples submitted.

TABLE XIV

Mill L--42-lb. Linerboard

156276	L-227	12/ 1/53	11/ 9/53	1	44.6	43.2	43.9	14.8	12.9	14.0	121	78	103	41	36	38	424	344	391a	464	368	417a
156277	L-228	12/ 1/53	11/13/53	1	43.6	41.6	42.5	13.5	11.8	12.8	126	83	106	38	34	35	384	304	345a	464	352	397a
156357	L-229	12/ 9/53	11/16/53	1	44.4	42.2	43.4	14.2	12.2	13.0	122	89	104	39	33	36	432	336	375a	440	368	396a
156358	L-230	12/ 9/53	11/19/53	1	43.4	42.0	42.6	13.3	11.7	12.7	122	87	106	36	30	33	456	328	365a	408	336	372a
156491	L-231	12/17/53	11/26/53	1	43.8	41.0	42.9	14.0	11.7	12.6	120	93	103	36	30	34	360	304	335a	416	336	373a
156492	L-232	12/17/53	11/27/53	1	44.2	43.0	43.8	14.6	13.1	13.9	124	84	103	39	32	36	416	320	356a	432	352	397a
156540	L-233	12/22/53	12/ 2/53	1	44.0	43.0	43.5	13.8	12.0	13.0	120	90	106	36	31	34	400	288	342a	400	328	365a
156541	L-234	12/22/53	12/ 3/53	1	44.2	43.0	43.6	13.8	12.1	12.8	122	88	105	34	28	32	384	304	335	448	336	372a
Current Mill Average:					43.3			13.1			104			35			356			386		
Cumulative Mill Average:					43.0			13.6			106			36			360			390		
Mill Factor, %:					100.7			96.3			98.1			97.2			98.9			99.0		
Mill Index, %:					100.5			94.9			98.1			97.2			96.2			95.8		

^a This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

TABLE XV

SUMMARY OF INDIVIDUAL TEST LOTS--DECEMBER 1 THROUGH DECEMBER 31, 1953 (continued)

File No.	Mill Code	Fin- ish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			G. E. Puncture, units			Elmendorf Tear, g./sheet					
						Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	In		Across			
																		Max.	Min.	Av.	Max.	Min.	Av.
Mill M--42-lb. Linerboard																							
156273	M-206	W.	12/ 1/53	11/16/53	4	45.6	43.6	44.5	15.6	13.9	14.4	129	90	112	39	34	36	472	400	431a	464	392	424a
156345	M-207	W.	12/ 8/53	11/23/53	4	45.4	43.0	44.0	14.2	13.6	14.0	124	84	109	38	33	36	544	392	448a	440	336	394a
156346	M-208	W.	12/ 8/53	11/27/53	2	46.0	42.2	44.5	14.2	13.2	13.7	130	88	106	36	31	34	432	320	362a	424	368	389a
156457	M-209	W.	12/14/53	12/ 1/53	2	46.2	40.0	42.8	14.2	13.2	13.7	125	78	105	40	31	35	440	312	385	440	336	403a
156458	M-210	W.	12/14/53	12/ 3/53	4	45.0	42.4	43.8	14.2	13.2	13.8	126	90	107	38	34	36	472	352	423a	416	368	387a
156480	M-211	W.	12/16/53	12/ 8/53	2	47.6	43.2	45.1	15.0	13.9	14.2	123	87	105	40	31	35	440	360	392a	456	392	419a
156481	M-212	W.	12/16/53	12/ 9/53	4	45.4	43.4	44.7	15.0	13.8	14.2	113	86	101	38	33	36	432	344	388a	464	368	401a
Current Mill Average:						44.2			14.0			107			35			404			402		
Cumulative Mill Average:						42.9			13.7			107			35			386			404		
Mill Factor, %:						103.0			102.2			100.0			100.0			104.7			99.5		
Mill Index, %:						102.6			101.4			100.9			97.2			109.2			99.8		

^a This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

TABLE XVIII

SUMMARY OF INDIVIDUAL TEST LOTS--DECEMBER 1 THROUGH DECEMBER 31, 1953 (continued)

File No.	Mill Code	Fin- ish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			G. E. Puncture, units			Elmendorf Tear, g./sheet							
						Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	In		Across		Max.	Min.	Av.	
<u>Mill E--44/46-lb. Drum Linerboard</u>																									
156274	E-46	W.F.	12/ 1/53	11/23/53	2	46.4	44.8	45.6	15.9	14.3	15.2	101	80	90	36	30	34	408	312	345a	448	328	370a		
156333	E-48	W.F.	12/ 5/53	12/ 1/53	2	50.0	49.6	49.9	17.1	16.0	16.5	112	77	95	48	36	43	448	368	408	528	400	455a		
Current Mill Average:									47.7			15.8			92			38			377			412	
Cumulative Mill Average:									47.2			14.4			101			39			436			417	
Mill Factor, %:									101.1			109.7			91.1			97.4			86.5			98.8	
<u>Mill E--44-lb. Linerboard</u>																									
156524	E-50	W.F.	12/21/53	12/15/53	2	47.2	44.2	45.7	15.6	13.5	14.6	140	92	112	38	33	35	496	328	383a	448	360	404a		
<u>Mill E--39-lb. Linerboard</u>																									
156525	E-51		12/21/53	12/17/53	2	43.6	41.8	42.5	14.7	12.4	13.6	126	79	102	35	30	33	424	304	371a	416	360	381a		

^a This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

TABLE XVI

SUMMARY OF INDIVIDUAL TEST LOTS--DECEMBER 1 THROUGH DECEMBER 31, 1953 (continued)

File No.	Mill Code	Fin- ish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			G. E. Puncture, units			Elmendorf Tear, g./sheet					
						Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	In		Across		Av.	
Mill N--42-lb. Linerboard																							
156392	N-45	--	12/10/53	11/28/53	1	44.2	43.0	43.6	13.3	11.8	12.5	127	90	106	40	33	37	400	312	359a	440	352	404a
156393	N-46	WF1S	12/10/53	11/28/53	1	42.8	42.0	42.4	12.9	11.6	12.4	124	84	105	36	32	34	400	288	356a	416	336	387a
156443	N-47	WF1S	12/12/53	12/ 2/53	1	44.2	42.4	43.1	13.9	12.4	13.0	124	87	106	38	34	36	376	304	333a	424	352	386a
156444	N-48	WF1S	12/12/53	12/ 3/53	1	43.6	42.0	42.7	12.6	11.4	12.1	122	80	104	38	32	35	360	312	331	416	360	386a
156445	N-49	WF1S	12/12/53	12/ 6/53	1	43.2	42.4	42.8	12.7	11.4	12.1	123	84	108	36	31	34	400	320	357a	440	368	398a
156446	N-50	WF1S	12/12/53	12/ 6/53	1	42.8	42.2	42.4	12.4	11.7	12.0	117	93	106	38	34	36	384	288	339a	432	368	398a
156521	N-51	WF1S	12/21/53	12/14/53	1	43.6	42.4	43.1	12.9	11.8	12.3	126	87	106	38	32	35	376	264	324	424	368	388a
Current Mill Average:						42.9			12.3			106			35			343			392		
Cumulative Mill Average:						42.4			12.3			107			31			335			373		
Mill Factor, %:						101.2			100.0			99.1			112.9			102.4			105.1		
Mill Index, %:						99.5			89.1			100.0			97.2			92.7			97.3		

TABLE XVII

Mill O--42-lb. Linerboard

No samples submitted.

^a This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

As a supplementary part of the Continuous Baseline Study, comparisons of the mill test results with those obtained at The Institute of Paper Chemistry on corresponding samples have been included in this report. As may be noted in Table XIX, the atmospheric conditions used prior to and during the testing period varied considerably.

TABLE XIX

Mill Code	Preconditioning			Conditioning		
	R.H., %	Temp., ° F.	Time, hr.	R.H., %	Temp., ° F.	Time, hr.
A		None		30-64	68-79	—
B	30-35	70-71	0.5	50	70	24-120
C	50	72-73	24-120		None	
D	31-32	77-78	8	51-53	71-73	16
E		None		58-65	72-74	—
F		None		40-51	72-74	48-144
G		None		50	73	24-36
H		None		50	73	24
I		None		50-54	76-78	—
J		None		50	73	0.5
K			No samples submitted.			
L		None		30-60	78-82	—
M		None		34-49	77-78	—
N	50	73	24	50-54	70-73	24
O			No samples submitted.			
E*		None		57-74	76-78	—

* Drum linerboard.

A summary of the mill comparisons for the current period as compared with the previous period may be seen in Tables XX and XXI, respectively. The comparison for the various mills is given in Tables XXII to XXXVI, for the 42-lb. liner samples. A comparison of the special drum stock is given in Table XXXVII. In all the comparisons

given in Tables XX to XXXVII, the Institute's test values have been used as the reference line.

A comparison of the test data in Tables XX and XXI indicates that in the majority of cases there is good agreement between the mill and Institute data. Table XX shows the average difference encountered in the comparison of Institute and mill results for the sample lots submitted by each mill for the current period, as well as the maximum difference encountered in comparing the Institute and mill test results for a given sample lot. In Table XXI, the average differences shown for each test in Table XX have been calculated on a percentage basis for each mill. In addition, for purposes of comparison, the average percentage differences for the preceding two periods are shown.

It may be noted in Table XXI that the maximum variation between the average basis weight results of the Institute and those of a given mill on corresponding samples is four per cent for the current period. This figure compares favorably with the maximum variation of three per cent for the preceding two periods. Further, it may be noted that the average basis weight results for Mills H and J are higher than those for the Institute, whereas the result for Mill E is the same and the results for the other mills are lower. In general, the agreement between Institute and mill basis weight results is very good.

The maximum variation in caliper for the current period is eight per cent. Compared with the values for the Institute, the average results for Mills I and J are higher while the average results for

the other mills are lower. The accord between Institute and mill caliper values is good with the exception of Mills E and M.

It may be noted in Table XXI that the bursting strength results exhibit a maximum variation of eight per cent for the current period. The average results for Mills A, B, F, G, L, and M are higher than those for the Institute, whereas the results for Mills D, E, H, I, J, and N are lower and the result for Mill C is the same. The agreement in bursting strength results is good with the exception of Mill M.

The G. E. puncture results exhibit a maximum variation of eleven per cent for the current period. Compared with the values for the Institute, the results for Mills A, C, E, I, and J are higher, whereas the results for Mills B, F, G, and M are lower and the result for Mill H is the same. The agreement between the Institute and mill results is good for all mills except A, G, and M.

It may be seen in Tables XX and XXI that the average machine direction tear results for Mills D, I, and M are higher than those for the Institute whereas the result for Mill J is the same and the results for the other mills are lower. The maximum variation for the current period is twelve per cent. The differences encountered for Mills E, F, and L appear to be excessive.

With regard to the cross-machine direction tear results, it may be noted that the average results for Mills C, D, I, J, and N are higher than those for the Institute whereas the average results for

the other mills are lower. The maximum variation for the current period is eleven per cent. The differences for Mills I and J appear to be excessive.

TABLE XX

SUMMARY OF TEST RESULT COMPARISONS
(Average Mill and Institute Results)

No. Samples Compared	Mills*												
	A	B	C	D	E	F	G	H	I	J	L	M	N
	7	24	8	6	2	15	8	2	4	6	8	7	7
	<u>Basis Weight</u>												
Institute	43.5	43.8	43.3	43.1	44.6	42.5	43.9	42.9	42.6	43.1	43.3	44.2	42.9
Mill	42.8	43.0	43.0	43.0	44.6	41.8	43.6	43.0	42.3	43.2	42.6	42.6	42.4
Av. Diff.**	-0.7	-0.8	-0.3	-0.1	0.0	-0.7	-0.3	+0.1	-0.3	+0.1	-0.7	-1.6	-0.5
Max. Diff.***	-1.6	-1.2	-0.5	+0.7	0.0	-1.4	-0.5	+0.2	-0.7	+1.0	-1.4	-2.8	-1.8
	<u>Caliper</u>												
Institute	12.9	12.9	14.2	12.5	14.2	13.3	12.4	12.4	13.0	13.2	13.1	14.0	12.3
Mill	12.7	12.6	13.9	12.4	13.1	12.6	12.2	12.2	13.2	13.4	12.5	12.9	11.9
Av. Diff.**	-0.2	-0.3	-0.3	-0.1	-1.1	-0.7	-0.2	-0.2	+0.2	+0.2	-0.6	-1.1	-0.4
Max. Diff.***	-0.4	-0.7	-0.4	-0.3	-1.2	-1.0	-0.4	-0.2	+0.8	+0.4	-1.7	-1.3	-0.7
	<u>Bursting Strength</u>												
Institute	111	108	110	107	105	106	124	106	109	113	104	107	106
Mill	112	109	110	102	102	110	125	105	108	112	105	116	104
Av. Diff.**	+1	+1	0	-5	-3	+4	+1	-1	-1	-1	+1	+9	-2
Max. Diff.***	+7	+7	-7	-9	-4	+12	+4	-2	-3	-4	+4	+13	-9
	<u>G. E.uncture</u>												
Institute	32	30	34	34	34	36	33	32	31	31	35	35	35
Mill	35	28	35	--	35	35	30	32	32	33	--	31	--
Av. Diff.**	+3	-2	+1	--	+1	-1	-3	0	+1	+2	--	-4	--
Max. Diff.***	+5	-5	+3	--	+1	-5	-4	-1	+2	+3	--	-6	--

(Continued on next page.)

TABLE XX (Cont.)

SUMMARY OF TEST RESULT COMPARISONS
(Average Mill and Institute Results)

	Mills*												
	A	B	C	D	E	F	G	H	I	J	L	M	N
No. Samples Compared	7	24	8	6	2	15	8	2	4	6	8	7	7
<u>Tearing Strength, in</u>													
Institute	329	309	337	359	370	377	355	347	339	360	356	404	343
Mill	304	288	320	363	325	341	336	324	366	360	321	409	335
Av. Diff.**	-25	-21	-17	+4	-45	-36	-19	-23	+27	0	-35	+5	-8
Max. Diff.***	-60	-58	-29	+40	-76	-53	-31	-26	+64	-25	-71	+28	-40
<u>Tearing Strength, across</u>													
Institute	374	360	381	383	378	415	391	397	394	381	386	402	392
Mill	361	350	391	404	347	391	379	365	436	419	376	400	420
Av. Diff.**	-13	-10	+10	+21	-31	-24	-12	-32	+42	+38	-10	-2	+28
Max. Diff.***	-35	-74	+32	+46	-65	-38	-41	-34	+64	+47	-38	+29	+46

* Comparison based on averages involves only those samples on which mill test data were submitted.

** Average difference is the difference between the Institute mill average and the mill average based on mill test data.

*** Maximum difference encountered in comparing the Institute average and the mill average for any sample submitted by that particular mill.

TABLE XXI
COMPARISON OF INSTITUTE-MILL DIFFERENCES BY PERIODS

	Basis Weight	Caliper	Average Difference, per cent			
			Bursting Strength	G. E. Puncture	Tearing in	Strength across
Mill A						
Current period	-2	-2	+0.9	+9	-8	-3
77th period	-0.7	-0.8	0	+3	+4	-2
76th period	-0.2	+0.8	0	+3	0	+0.8
Mill B						
Current period	-2	-2	+0.9	-7	-7	-3
77th period	0	-2	-0.9	-3	+1	+3
76th period	-0.9	-0.8	+0.9	-3	-5	-1
Mill C						
Current period	-0.7	-2	0	+3	-5	+3
77th period	+0.2	-3	0	+6	-4	+3
76th period	-0.5	-1	-0.9	+3	-5	+2
Mill D						
Current period	-0.2	-0.8	-5	--	+1	+5
77th period	+1	-2	-2	--	+3	+11
76th period	+0.2	-2	0	--	+1	+8
Mill E						
Current period	0	-8	-3	+3	-12	-8
77th period	+0.5	-5	-3	+6	-8	+0.3
76th period	+0.5	-7	-1	0	-3	+3
Mill F						
Current period	-2	-5	+4	-3	-10	-6
77th period	-1	-5	+5	-8	-10	-6
76th period	-0.5	-4	+5	0	-0.3	+1
Mill G						
Current period	-0.7	-2	+0.8	-9	-5	-3
77th period	-0.2	-2	+0.8	-9	-4	-5
76th period	+0.4	-2	-0.8	-6	-3	-2
Mill H						
Current period	+0.2	-2	-0.9	0	-7	-8
77th period	+1	0	-2	0	-5	-7
76th period	+0.9	-2	+1	+3	0	+2
Mill I						
Current period	-0.7	+2	-0.9	+3	+8	+11
77th period	-0.5	-2	0	0	+7	+10
76th period	-1	-2	+0.9	+6	+9	+11
Mill J						
Current period	+0.2	+2	-0.9	+6	0	+10
77th period	+2	-0.7	-3	+3	-4	-1
76th period	+1	-0.7	+2	+3	0	+4
Mill L						
Current period	-2	-5	+1	--	-10	-3
77th period	-1	-7	+0.9	--	-12	-6
76th period	-0.2	-2	+1	--	-1	+5
Mill M						
Current period	-4	-8	+8	-11	+1	-0.5
77th period	-3	-8	+9	-14	-2	-0.2
76th period	-1	-7	+8	-6	+10	+10
Mill N						
Current period	-1	-3	-2	--	-2	+7
77th period	-0.5	-3	0	--	-3	+8
76th period	-0.5	-2	-2	--	-0.3	+10
Mill O						
Current period	--	--	--	--	--	--
77th period	+0.7	-2	-4	--	-7	+2
76th period	+0.7	0	-3	--	-5	+4

TABLE XXII

SUMMARY OF INDIVIDUAL TEST LOTS--DECEMBER 1 THROUGH DECEMBER 31, 1953

Institute Data versus Mill Data

File No.	Mill Code	Fin-ish	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			G. E. Puncture, units			Elmendorf Tear, g./sheet					
					IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	In	Across	IPC
<u>Mill A--42-lb. Linerboard</u>																						
156306	A-502	WF1S	11/22/53	2	43.1	42.7	-0.4	12.5	12.7	+0.2	111	111	0	33	34	+ 1	327a	331	+ 4	357a	365	+ 8
156307	A-503	WF1S	11/24/53	1	42.7	42.3	-0.4	12.9	12.7	-0.2	108	113	+ 5	31	33	+ 2	323a	300	-23	363a	367	+ 4
156355	A-504	WF1S	11/29/53	1	43.3	42.6	-0.7	12.8	12.4	-0.4	101	108	+ 7	30	33	+ 3	288	277	-11	353a	331	-22
156356	A-505	WF1S	12/ 1/53	2	43.4	43.0	-0.4	12.9	12.6	-0.3	110	112	+ 2	33	38	+ 5	340a	314	-26	375a	361	-14
156490	A-506	WF1S	12/ 6/53	2	43.1	42.8	-0.3	12.8	12.9	+0.1	108	112	+ 4	32	35	+ 3	311	300	-11	363a	362	- 1
156546	A-507	WF1S	12/14/53	1	44.5	42.9	-1.6	13.2	12.9	-0.3	119	114	- 5	34	35	+ 1	354a	305	-49	409a	374	-35
156547	A-508	WF1S	12/15/53	1	44.6	43.0	-1.6	13.3	13.0	-0.3	118	115	- 3	35	35	0	359a	299	-60	399a	367	-32
Current Mill Average:					43.5	42.8	-0.7	12.9	12.7	-0.2	111	112	+ 1	32	35	+ 3	329	304	-25	374	361	-13

^a This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: All "current mill average" data are calculated from the totals of the individual readings.

TABLE XXIII

SUMMARY OF INDIVIDUAL TEST LOTS--DECEMBER 1 THROUGH DECEMBER 31, 1953 (continued)

Institute Data versus Mill Data

File No.	Mill Code	Fin- ish	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			G. E. Puncture, units			Elmendorf Tear, g./sheet						
					IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	In			Across		
																		IPC	Mill	Diff.	IPC	Mill	Diff.
<u>Mill B--42-lb. Linerboard</u>																							
156292	B-903	WF1S	11/23/53	1	43.2	42.7	-0.5	12.7	12.1	-0.6	111	110	-1	28	26	- 2	282	280	- 2	342a	333	- 9	
156293	B-904	WF1S	11/23/53	1	43.3	42.3	-1.0	12.7	12.1	-0.6	108	108	0	27	25	- 2	287a	266	-21	345a	327	-18	
156294	B-905	WF1S	11/23/53	1	43.4	42.6	-0.8	12.7	12.1	-0.6	110	110	0	27	26	- 1	269a	275	+ 6	335a	335	0	
156298	B-906	WF1S	11/23/53	1	43.0	42.4	-0.6	12.7	12.1	-0.6	112	111	-1	28	26	- 2	291	277	-14	344a	336	- 8	
156317	B-907	WF1S	11/24/53	1	43.4	42.8	-0.6	13.2	12.8	-0.4	106	104	-2	29	25	- 4	289	265	-24	338a	304	-34	
156318	B-908	WF1S	11/24/53	1	43.7	42.9	-0.8	13.2	12.8	-0.4	99	106	+7	29	25	- 4	293a	261	-32	335a	324	-11	
156319	B-909	WF1S	11/24/53	1	43.6	43.2	-0.4	13.2	12.8	-0.4	104	104	0	30	25	- 5	286a	267	-19	347a	323	-24	
156320	B-910	WF1S	11/24/53	1	43.4	42.4	-1.0	13.0	12.6	-0.4	103	103	0	29	25	- 4	280	266	-14	329a	313	-16	
156321	B-911	WF1S	11/24/53	1	43.6	42.9	-0.7	13.2	12.5	-0.7	104	105	+1	28	25	- 3	279	267	-12	329a	345	+16	
156322	B-912	WF1S	11/24/53	1	43.7	43.0	-0.7	13.3	12.6	-0.7	106	106	0	29	26	- 3	292a	268	-24	335a	329	- 6	
156323	B-913	WF1S	11/24/53	1	43.4	42.6	-0.8	13.2	12.5	-0.7	102	106	+4	28	25	- 3	284a	252	-32	333a	317	-16	
156324	B-914	WF1S	11/24/53	1	43.8	43.1	-0.7	13.3	12.6	-0.7	107	107	0	29	25	- 4	280a	275	- 5	335a	338	+ 3	
156498	B-915	WF1S	12/ 8/53	1	44.4	43.3	-1.1	13.0	13.0	0.0	112	113	+1	33	29	- 4	357a	299	-58	396a	387	- 9	
156499	B-916	WF1S	12/ 8/53	1	44.5	43.3	-1.2	13.1	12.8	-0.3	112	112	0	33	29	- 4	347a	301	-46	421a	347	-74	
156500	B-917	WF1S	12/ 8/53	1	44.3	43.2	-1.1	12.9	12.8	-0.1	108	113	+5	33	29	- 4	359a	317	-42	375a	373	- 2	
156493	B-918	WF1S	12/ 8/53	1	44.1	43.1	-1.0	12.9	12.8	-0.1	111	111	0	33	30	- 3	339a	295	-44	399a	392	- 7	
156534	B-919	WF1S	12/ 8/53	1	44.7	43.5	-1.2	13.0	13.1	+0.1	112	113	+1	33	29	- 4	347	315	-32	395a	390	- 5	
156535	B-920	WF1S	12/ 8/53	1	44.0	43.2	-0.8	12.8	12.9	+0.1	108	112	+4	33	31	- 2	335a	303	-32	390a	359	-31	
156542	B-921	WF1S	12/ 8/53	1	44.1	43.2	-0.9	13.0	12.9	-0.1	110	113	+3	33	32	- 1	340a	299	-41	385a	368	-17	
156536	B-922	WF1S	12/ 8/53	1	44.4	43.6	-0.8	12.9	13.1	+0.2	109	113	+4	33	31	- 2	327a	311	-16	379a	372	- 7	
156537	B-923	WF1S	12/15/53	1	43.4	43.0	-0.4	12.2	12.6	+0.4	109	110	+1	29	30	+ 1	313	309	- 4	356a	383	+27	
156538	B-924	WF1S	12/15/53	1	43.4	43.0	-0.4	12.2	12.5	+0.3	110	110	0	29	30	+ 1	307a	319	+12	356a	381	+25	
156539	B-925	WF1S	12/15/53	1	43.6	43.1	-0.5	12.0	12.6	+0.6	109	111	+2	29	30	+ 1	322a	307	-15	365a	366	+ 1	
156543	B-926	WF1S	12/15/53	1	43.7	43.1	-0.6	12.3	12.5	+0.2	113	109	-4	29	29	0	320a	321	+ 1	369a	365	- 4	
Current Mill Average:					43.8	43.0	-0.8	12.9	12.6	-0.3	108	109	+1	30	28	- 2	309	288	-21	360	350	-10	

^a This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: All "current mill average" data are calculated from the totals of the individual readings.

TABLE XXIV

SUMMARY OF INDIVIDUAL TEST LOTS—DECEMBER 1 THROUGH DECEMBER 31, 1953 (Continued)

Institute Data versus Mill Data

File No.	Mill Code	Fin- ish	Date Made	Mch. No.	Basis Weight, lb.			Caliper points			Bursting Strength, p.s.i. Gage			G. E. Puncture, units			Elmendorf Tear, g./sheet			Across		
					IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	In Mill	Diff.	IPC	Mill	Diff.
Mill C -- 42-lb. Linerboard																						
156466	C-523	W.F.	12- 2-53	1	43.5	43.2	-0.3	14.2	13.9	-0.3	108	110	+ 2	33	33	0	337 ^a	310	-27	373 ^a	356	-17
156467	C-524	W.F.	12- 2-53	1	43.5	43.2	-0.4	14.2	13.9	-0.3	111	112	+ 1	33	32	- 1	335 ^a	314	-21	376 ^a	383	+ 7
156468	C-525	W.F.	12- 3-53	1	43.4	43.0	-0.4	13.8	13.4	-0.4	113	106	- 7	33	34	+ 1	321 ^a	329	+ 8	365 ^a	384	+19
156469	C-526	W.F.	12- 3-53	1	43.3	42.9	-0.4	13.9	13.7	-0.2	110	107	- 3	32	34	+ 2	329 ^a	313	-16	366 ^a	375	+ 9
156501	C-527	W.F.	12- 8-53	1	42.7	42.7	-0.5	14.1	13.8	-0.3	107	110	+ 3	34	36	+ 2	343	328	-15	395 ^a	390	- 5
156502	C-528	W.F.	12- 8-53	1	42.4	42.2	-0.2	14.0	13.7	-0.3	107	104	- 3	33	35	+ 2	341	312	-29	395 ^a	398	+ 3
156503	C-529	W.F.	12- 9-53	1	43.8	43.9	+0.1	14.6	14.4	-0.2	111	115	+ 4	36	38	+ 2	341 ^a	330	-11	392 ^a	422	+30
156504	C-530	W.F.	12- 9-53	1	43.8	43.8	0.0	14.6	14.3	-0.3	112	113	+ 1	36	39	+ 3	353	328	-25	386 ^a	418	+32
Current Mill Average:					43.3	43.0	-0.3	14.2	13.9	-0.3	110	110	0	34	35	+ 1	337	320	-17	381	391	+10

^aThis average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: All "current mill average" data are calculated from the totals of the individual readings.

TABLE XXV.

SUMMARY OF INDIVIDUAL TEST LOTS--DECEMBER 1 THROUGH DECEMBER 31, 1953 (Continued)

Institute Data versus Mill Data

File No.	Mill Code	Fin- ish	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			G. E. Puncture, units			Elmendorf Tear, g./sheet								
					IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.
Mill D -- 42-lb. Linerboard																									
156353	D-718	W.F.	12- 5-53	4	42.8	43.1	+0.3	12.7	12.6	-0.1	101	102	+ 1	33			347 ^a	385	+38	373 ^a	419	+46			
156354	D-719	W.F.	12- 6-53	4	42.5	42.3	-0.2	12.5	12.5	0.0	105	102	- 3	34			357 ^a	397	+40	375 ^a	415	+40			
156487	D-720	W.F.	12-11-53	4	43.2	42.6	-0.6	12.4	12.2	-0.2	102	96	- 6	34			351 ^a	330	-21	392 ^a	382	-10			
156488	D-721	W.F.	12-13-53	4	43.1	42.5	-0.6	12.5	12.2	-0.3	108	101	- 7	34			363 ^a	359	- 4	391 ^a	411	+20			
156489	D-722	S.F.	12-14-53	4	43.8	43.5	-0.3	12.3	12.0	-0.3	122	113	- 9	36			371 ^a	352	-19	391 ^a	405	+14			
156495	D-723	W.F.	12-15-53	4	43.2	43.9	+0.7	12.8	12.7	-0.1	103	98	- 5	32			363 ^a	357	- 6	379 ^a	393	+14			
Current Mill Average:					43.1	43.0	-0.1	12.5	12.4	-0.1	107	102	- 5	34			359	363	+ 4	383	404	+21			

TABLE XXVI

Mill E -- 42-lb. Linerboard

156275	E-47	W.F.	11-25-53	2	43.6	43.6	0.0	14.1	13.0	-1.1	93	92	- 1	33	34	+ 1	366 ^a	353	-13	361 ^a	365	+ 4			
156361	E-49	W.F.	12- 7-53	2	45.5	45.5	0.0	14.4	13.2	-1.2	116	112	- 4	35	36	+ 1	373 ^a	297	-76	394 ^a	329	-65			
Current Mill Average:					44.6	44.6	-0.0	14.2	13.1	-1.1	105	102	- 3	34	35	+ 1	370	325	-45	378	347	-31			

^aThis average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: All "current mill average" data are calculated from the totals of the individual readings.

TABLE XXVII

SUMMARY OF INDIVIDUAL TEST LOTS--DECEMBER 1 THROUGH DECEMBER 31, 1953 (continued)

Institute Data versus Mill Data

File No.	Mill Code	Fin- ish	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			G. E. Puncture, units			Elmendorf Tear, g./sheet					
					IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.
Mill F--42-lb. Linerboard																						
156325	F-72	W.F.	10/30/53	--	42.3	41.3	-1.0	13.0	12.4	-0.6	106	116	+10	36	33	- 3	376a	323	-53	423a	385	-38
156326	F-73	W.F.	11/ 3/53	--	40.7	40.2	-0.5	13.1	12.6	-0.5	106	109	+ 3	34	31	- 3	350	316	-34	412a	379	-33
156327	F-74	W.F.	11/ 3/53	--	42.6	41.8	-0.8	13.1	12.7	-0.4	103	105	+ 2	34	32	- 2	370a	325	-45	382a	371	-11
156328	F-75	W.F.	11/ 6/53	--	42.7	41.3	-1.4	13.6	13.0	-0.6	102	110	+ 8	38	33	- 5	377a	333	-44	406a	368	-38
156329	F-76	W.F.	11/ 6/53	--	40.7	39.8	-0.9	13.1	12.4	-0.7	102	108	+ 6	34	30	- 4	358a	315	-43	388a	355	-33
156330	F-77	W.F.	11/ 9/53	--	42.4	41.8	-0.6	13.2	12.7	-0.5	106	110	+ 4	35	34	- 1	361a	325	-36	403a	375	-28
156331	F-78	W.F.	11/12/53	--	42.6	41.8	-0.8	13.4	12.5	-0.9	108	106	- 2	35	32	- 3	349	319	-30	394a	367	-27
156332	F-79	W.F.	11/16/53	--	42.9	42.7	-0.2	13.8	13.1	-0.7	102	110	+ 8	39	39	0	385a	361	-24	415a	412	- 3
156450	F-80	W.F.	11/17/53	--	42.1	41.8	-0.3	13.2	12.6	-0.6	105	117	+12	37	39	+ 2	395a	365	-30	433a	405	-28
156451	F-81	W.F.	11/20/53	--	43.0	42.7	-0.3	13.5	12.7	-0.8	104	106	+ 2	37	38	+ 1	389a	349	-40	427a	392	-35
156452	F-82	W.F.	11/21/53	--	43.3	42.5	-0.8	13.5	12.7	-0.8	107	110	+ 3	38	39	+ 1	392a	368	-24	433a	420	-13
156453	F-83	W.B.	11/24/53	1	43.2	42.6	-0.6	13.5	12.5	-1.0	103	105	+ 2	39	37	- 2	385a	367	-18	419a	413	- 6
156454	F-84	W.B.	11/25/53	--	42.8	41.8	-1.0	13.1	12.4	-0.7	110	115	+ 5	37	36	- 1	394a	347	-47	430a	400	-30
156455	F-85	W.F.	11/25/53	--	42.8	41.9	-0.9	12.8	12.4	-0.4	110	113	+ 3	36	35	- 1	395a	343	-52	423a	393	-30
156456	F-86	W.F.	12/ 3/53	--	43.5	42.8	-0.7	13.4	13.1	-0.3	108	113	+ 5	36	37	+ 1	385a	352	-33	436a	428	- 8
Current Mill Average:					42.5	41.8	-0.7	13.3	12.6	-0.7	106	110	+ 4	36	35	- 1	377	341	-36	415	391	-24

^aThis average includes the readings for one or more specimens which tore beyond thw 3/8-inch limit.

Note: All "current mill average" data are calculated from the totals of the individual readings.

TABLE XXVIII

SUMMARY OF INDIVIDUAL TEST LOTS—DECEMBER 1 THROUGH DECEMBER 31, 1953 (Continued)

Institute Data versus Mill Data

File No.	Mill Code	Fin- ish	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			G. E. Puncture, units			Elmendorf Tear, g./sheet					
					IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.
<u>Mill G — 42-lb. Linerboard</u>																						
156301	G-542	W.F.	11-18-53	—	44.0	43.5	-0.5	12.1	12.0	-0.1	125	126	+ 1	32	29	- 3	351 ^a	331	-20	379 ^a	363	-16
156302	G-543	W.F.	11-18-53	—	44.4	44.1	-0.3	12.2	12.0	-0.2	127	128	+ 1	33	30	- 3	367 ^a	336	-31	391 ^a	376	-15
156278	G-544	W.F.	11-26-53	—	43.9	43.5	-0.4	12.6	12.2	-0.4	127	123	- 4	32	30	- 2	356 ^a	333	-23	379 ^a	366	-13
156279	G-545	W.F.	11-26-53	—	44.6	44.7	+0.1	12.0	12.0	0.0	128	124	- 4	34	32	- 2	369 ^a	340	-29	395 ^a	390	- 5
156464	G-546	W.F.	12- 3-53	—	43.2	43.0	-0.2	12.0	12.0	0.0	137	135	- 2	31	30	- 1	329 ^a	321	- 8	381 ^a	358	-23
156465	G-547	W.F.	12- 3-53	—	43.3	43.0	-0.3	12.4	12.3	-0.1	124	128	+ 4	32	30	- 2	346 ^a	325	-21	396 ^a	355	-41
156496	G-548	W.F.	12- 9-53	—	44.3	43.9	-0.4	13.0	12.8	-0.2	114	115	+ 1	35	31	- 4	355 ^a	358	+ 3	399 ^a	404	+ 5
156497	G-549	W.F.	12- 9-53	—	43.5	43.1	-0.4	13.0	12.6	-0.4	113	117	+ 4	34	31	- 3	365 ^a	342	-23	407 ^a	419	+12
Current Mill Average:					43.9	43.6	-0.3	12.4	12.2	-0.2	124	125	+ 1	33	30	- 3	355	336	-19	391	379	-12

TABLE XXIX

Mill H — 42-lb. Linerboard

156441	H-429	WFLS	11-30-53	2	43.1	43.2	+0.1	12.3	12.2	-0.1	105	103	- 2	32	31	- 1	352	326	-26	394 ^a	363	-31
156442	H-430	WFLS	12- 1-53	2	42.6	42.8	+0.2	12.4	12.2	-0.2	107	106	- 1	32	32	0	342	322	-20	401 ^a	367	-34
Current Mill Average:					42.9	43.0	+0.1	12.4	12.2	-0.2	106	105	- 1	32	32	0	347	324	-23	397	365	-32

^aThis average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.
 Note: All "current mill average" data are calculated from the totals of the individual readings.

TABLE XXX

SUMMARY OF INDIVIDUAL TEST LOTS--DECEMBER 1 THROUGH DECEMBER 31, 1953 (continued)

Institute Data versus Mill Data

File No.	Mill Code	Fin- ish	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			G. E. Puncture, units			Elmendorf Tear, g./sheet					
					IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	In Mill	Diff.	IPC	Across Mill	Diff.
<u>Mill I--42-lb. Linerboard</u>																						
156359	I-349	WF1S	12/ 1/53	1	42.2	42.2	0.0	12.6	13.4	+0.8	111	108	-3	30	30	0	332a	347	+15	375a	439	+64
156360	I-350	WF1S	12/ 2/53	1	42.3	42.1	-0.2	12.6	13.4	+0.8	110	112	+ 2	30	30	0	336a	339	+ 3	393a	437	+44
156482	I-351	WF1S	12/ 3/53	1	43.3	42.6	-0.7	13.9	13.2	-0.7	107	105	- 2	33	33	0	343a	407	+64	419a	441	+22
156483	I-352	WF1S	12/ 4/53	1	42.7	42.2	-0.5	12.8	12.6	-0.2	108	107	- 1	32	34	+ 2	343a	372	+29	389a	425	+36
Current Mill Average:					42.6	42.3	-0.3	13.0	13.2	+0.2	109	108	- 1	31	32	+ 1	339	366	+27	394	436	+42

TABLE XXXI

Mill J--42-lb. Linerboard

156299	J-459	B.F.	11/ 8/53	--	42.5	43.5	+1.0	13.2	13.5	+0.3	108	106	-2	31	32	+1	348a	347	-1	404a	425	+21
156300	J-460	B.F.	11/ 8/53	--	42.8	43.5	+0.7	13.1	13.5	+0.4	108	104	-4	31	33	+2	384a	359	-25	378a	425	+47
156394	J-461	B.F.	11/24/53	--	42.9	42.7	-0.2	12.9	13.2	+0.3	115	117	+2	30	33	+3	377a	375	-2	382a	427	+45
156395	J-462	B.F.	11/24/53	--	43.3	42.8	-0.5	13.0	13.2	+0.2	120	116	-4	31	33	+2	365a	373	+8	399a	439	+40
156519	J-463	B.F.	12/ 1/53	--	43.8	43.5	-0.3	13.6	13.5	-0.1	114	113	-1	31	33	+2	337a	351	+14	362a	397	+35
156520	J-464	B.F.	12/ 1/53	--	43.2	42.9	-0.3	13.5	13.7	+0.2	111	113	+2	30	32	+2	348a	352	+4	363a	399	+36
Current Mill Average:					43.1	43.2	+0.1	13.2	13.4	+0.2	113	112	-1	31	33	+2	360	360	0	381	419	+38

^a This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: All "current mill average" data are calculated from the totals of the individual readings.

TABLE XXXII

SUMMARY OF INDIVIDUAL TEST LOTS--DECEMBER 1 THROUGH DECEMBER 31, 1953 (continued)

Institute Data versus Mill Data

File No. N	Mill Code	Fin- ish	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			G. E. Puncture, units			Elmendorf Tear, g./sheet			
					IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	In	Across	

Mill K--42-lb. Linerboard

No samples submitted.

TABLE XXXIII

Mill L--42-lb. Linerboard

156276	L-227		11/ 9/53	1	43.9	43.0	-0.9	14.0	12.9	-1.1	103	106	+ 3	38			391a	359	-32	417a	405	-12
156277	L-228		11/13/53	1	42.5	42.1	-0.4	12.8	12.3	-0.5	106	104	- 2	35			345a	359	+14	397a	409	+12
156357	L-229		11/16/53	1	43.4	42.7	-0.7	13.0	12.1	-0.9	104	105	+ 1	36			375a	317	-58	396a	358	-38
156358	L-230		11/19/53	1	42.6	42.8	+0.2	12.7	12.7	0.0	106	104	- 2	33			365a	294	-71	372a	346	-26
156491	L-231		11/26/53	1	42.9	43.2	+0.3	12.6	13.1	+0.5	103	102	- 1	34			335a	330	- 5	373a	384	+11
156492	L-232		11/27/53	1	43.8	42.4	-1.4	13.9	12.2	-1.7	103	107	+ 4	36			356a	315	-41	397a	372	-25
156540	L-233		12/ 2/53	1	43.5	42.3	-1.2	13.0	12.5	-0.5	106	103	- 3	34			342a	285	-57	365a	353	-12
156541	L-234		12/ 3/53	1	43.6	42.3	-1.3	12.8	12.2	-0.6	105	107	+ 2	32			335	306	-29	372a	379	+ 7
Current Mill Average:					43.3	42.6	-0.7	13.1	12.5	-0.6	104	105	+ 1	35			356	321	-35	386	376	-10

^a This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: All "current mill average" data are calculated from the totals of the individual readings.

TABLE XXXI V

SUMMARY OF INDIVIDUAL TEST LOTS--DECEMBER 1 THROUGH DECEMBER 31, 1953 (continued)

Institute Data versus Mill Data

File No.	Mill Code	Fin- ish	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			G. E. Puncture, units			Elmendorf Tear, g./sheet					
					IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	In Diff.	Across IPC	Mill
<u>Mill M--42-lb. Linerboard</u>																						
156273	M-206	W.	11/16/53	4	44.5	42.9	-1.6	14.4	13.1	-1.3	112	122	+10	36	34	-2	431a	459	+28	424a	427	+ 3
156345	M-207	W.	11/23/53	4	44.0	43.3	-0.7	14.0	13.1	-0.9	109	122	+13	36	34	-2	448a	453	+ 5	394a	423	+29
156346	M-208	W.	11/27/53	2	44.5	41.7	-2.8	13.7	12.7	-1.0	106	115	+ 9	34	29	-5	362a	353	- 9	389a	364	-25
156457	M-209	W.	12/ 1/53	2	42.8	41.3	-1.5	13.7	12.6	-1.1	105	112	+ 7	35	29	-6	385	392	+ 7	403a	399	- 4
156458	M-210	W.	12/ 3/53	4	43.8	42.6	-1.2	13.8	12.8	-1.0	107	115	+ 8	36	31	-5	423a	448	+25	387a	399	+12
156480	M-211	W.	12/ 8/53	2	45.1	43.2	-1.9	14.2	13.1	-1.1	105	115	+10	35	30	-5	392a	379	-13	419a	406	-13
156481	M-212	W.	12/ 9/53	4	44.7	42.9	-1.8	14.2	13.2	-1.0	101	109	+ 8	36	30	-6	388a	375	-13	401a	379	-22
Current Mill Average:					44.2	42.6	-1.6	14.0	12.9	-1.1	107	116	+ 9	35	31	-4	404	409	+ 5	402	400	- 2

TABLE XXXV

Mill N--42-lb. Linerboard

156392	N-45	--	11/28/53	1	43.6	41.8	-1.8	12.5	11.9	-0.6	106	102	- 4	37			359a	319	-40	404a	401	- 3
156393	N-46	WF1S	11/28/53	1	42.4	42.6	+0.2	12.4	12.0	-0.4	105	103	- 2	34			356a	343	-13	387a	424	+37
156443	N-47	WF1S	12/ 2/53	1	43.1	42.4	-0.7	13.0	12.3	-0.7	106	108	+ 2	36			333a	345	+12	386a	429	+43
156444	N-48	WF1S	12/ 3/53	1	42.7	42.3	-0.4	12.1	11.8	-0.3	104	105	+ 1	35			331	327	- 4	386a	422	+36
156445	N-49	WF1S	12/ 6/53	1	42.8	42.3	-0.5	12.1	11.6	-0.5	108	101	- 7	34			357a	334	-23	398a	444	+46
156446	N-50	WF1S	12/ 6/53	1	42.4	42.1	-0.3	12.0	11.6	-0.4	106	110	+ 4	36			339a	353	+14	398a	423	+25
156521	N-51	WF1S	12/14/53	1	43.1	42.9	-0.2	12.3	12.0	-0.3	106	97	- 9	35			324	322	- 2	388a	397	+ 9
Current Mill Average:					42.9	42.4	-0.5	12.3	11.9	-0.4	106	104	- 2	35			343	335	- 8	392	420	+28

^a This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: All "current mill average" data are calculated from the totals of the individual readings.

TABLE XXXVI

SUMMARY OF INDIVIDUAL TEST LOTS--DECEMBER 1 THROUGH DECEMBER 31, 1953 (cpntinued)

Institute Data versus Mill Data

File No.	Mill Code	Fin- ish	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			G. E. Puncture, units			Elmendorf Tear, g./sheet		
					IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.

Mill 0--42-lb. Linerboard

No samples submitted.

TABLE XXXVII

Mill E--44/46-lb. Drum Linerboard

156274	E-46	W.F.	11/23/53	2	45.6	46.4	+0.8	15.2	14.2	-1.0	90	88	- 2	34	36	+ 2	345a	369	+24	370a	392	+22
156333	E-48	W.F.	12/ 1/53	2	49.9	49.6	-0.3	16.5	15	-1.5	95	98	+ 3	43	42	- 1	408	388	-20	455a	457	+ 2
Current Mill Average:					47.7	48.0	+0.3	15.8	14.6	-1.2	92	93	+ 1	38	40	+ 2	377	378	+ 1	412	424	+12

Mill E--44-lb. Linerboard

156524	E-50	W.F.	12/15/53	2	45.7	45.1	-0.6	14.6	13.3	-1.3	112	112	0	35	33	- 2	383a	265	-118	404a	311	-93
--------	------	------	----------	---	------	------	------	------	------	------	-----	-----	---	----	----	-----	------	-----	------	------	-----	-----

Mill E--39-lb. Linerboard

156525	E-51		12/17/53	2	42.5	42.7	+0.2	13.6	13.0	-0.6	102	110	+ 8	33	38	+ 5	371a	339	-32	381a	374	- 7
--------	------	--	----------	---	------	------	------	------	------	------	-----	-----	-----	----	----	-----	------	-----	-----	------	-----	-----

^a This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: All "current mill average" data are calculated from the totals of the individual readings.

IPST HASELTON LIBRARY



5 0602 01061697 9

RECEIVED
JAN 19 1964
LABORATORY